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(1) Applicant: TEXAS INSTRUMENTS LIMITED Manton Lane Bedford MK41 7PA (GB)

(72) Inventor: Ritchie, James Kenneth Alexander 31 Lovell Road Bedford, MK42 0LR (GB)

Inventor: Abbott, David 156 Tyne Crescent Bedford,MK41 7YB (GB)

Inventor: Anderson, Adrian Trellech Grange

Chepstow, Gwent NG6 6QW (GB) Inventor: Parris, Clifford

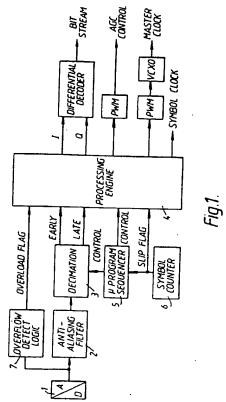
3 Park Glade

Tintern, Gwent NP6 6TX (GB)

(74) Representative: Abbott, David John et al Abel & Imray Northumberland House 303-306 High Holborn London, WC1V 7LH (GB)

(54) Method and apparatus for signal processing.

\$\text{57}\$ A digital demodulator for a NICAM 728 system signal has sampling and digitizing means converting the signal into a succession of digital samples. The digital samples pass through an anti-aliasing digital comb filter to a selector (decimator) that selects one sample in three and feeds it to a second digital filter. Digital matched filters for the in-phase (I) and quadrature (Q) components of the signal effect the demodulation. Carrier and symbols I tracking is carried out digitally. A pulse-width modulated automatic gain control signal is produced for controlling the amplitude of the signal applied to the sampling and digitizing means.



Jouve, 18, rue Saint-Denis, 75001 PARIS

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	DOCUMENTS CONSID	ERED TO BE RELEVAN	TT.	
ategory	Citation of document with indication, where appropriate, of relevant passages Relev to cla			CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
(WO-A-8 904 576 (DEUTSCHE ITT INDUSTRIES GMBH) 18 May 1989		1,2,5, 8-10,13, 18,19, 22,25-29	H04N5/60
'			11	
`	* the whole document	, * 	12,14	
,	ELEKTRONIK, vol.39, München, DE, XP00010 T. HILPERT et al.: ' Multistandard-Audio-	no.6, 16 March, 1990, 12222, pages 50-54,56; Digitaler Chinsatz	11	
۱	* the whole document		1,12,14	
L	ELEKTOR ELECTRONICS, XP000290987, pages 3 R. KRIJGSMAN: 'NICAN * the whole document	34-38,39-42; 1 decoder¹	-	
A	& MICRONAS MASTA101 QPSK demodulator', 1 Epsoo, FI, pages 1-1 * complete paper *	data sheet: 'NICAM 10 September, 1990,	1-14, 18-29	TECHNICAL FIELDS SEARCHED (Int. Cl.5)
A	& MICRONAS MAS7D102 data sheet: 'NICAM decoder', 10 September, 1990, Epsoo, FI, pages 1-17 * complete paper *		1-14, 18-29	H04N H04B H04H
A	& MICRONAS MAS7A103 bit D/A converter for 1990, Epsoo, FI, page * complete paper *	1-14, 18-29	H04L	
A	BBC RESEARCH DEPARTMENT REPORT, no.6, 1990, Tadworth, GB, XP000208352, pages A,B,C,1-27; A.J. BOWER: 'NICAM 728 - Digital two-channel sound for terrestrial television' * the whole document *		1-10, 18-29	
	-/			
	The present search report has b	oca drawn up for all claims		
Place of search Date of completion of the search				Examiner
THE HAGUE 11 MAY 1993		11 MAY 1993		HOEKSTRA A.
Y:pa do A:te	CATEGORY OF CITED DOCUMENTICULArly relevant if taken alone unficularly relevant if combined with anouncent of the same category chanological background on-written disclosure termediate document	E: earlier patent after the filling ther D: document cit L: document cite	ed in the application of the state of the st	blished on, or on



EUROPEAN SEARCH REPORT

Application Number

EP 92 30 3892 Page 2

ategory	Citation of document with indi		Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. CL.S.)
\	ELECTRONIC COMPONENTS	S and , no.3, Eindhoven, NL, 21–127; 8 two-channel	1,18	
				TECHNICAL FIELDS SEARCHED (Int. Cl.5)
	The present search report has be	een drawn up for all claims Date of completion of the search		Densing
X:p Y:p d A:t O:t	THE HAGUE	11 MAY 1993		HOEKSTRA A.
CATEGORY OF CITED DOCUMENTS T: theory or prin E: earlier patent X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category T: theory or prin E: decrease of the film D: document cite L: document cite			date I in the applicat for other reaso	ion